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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

GLASS, CHRISTOPHER W

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 03 28 2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/767,922

Applicant(s)

HOSHINO, KAZUHIRO

Examiner

Christopher W. Glass

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 23 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 23 January 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of.
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1. ☐ Notice of References Cited, PTO 892.
2. ☐ Interview Summary, PTO 413, Rev. 11/97.
3. ☐ Statement of Inventorship, PTO 706, Rev. 11/97.
4. ☐ Information Disclosure Statement, PTO 1449, Rev. 11/97.

DETAILED ACTION

Drawings

1. Figure 6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

A comma should be inserted between "board 53" and "and" on line 6 of page 2.

In the paragraph contained in lines 11-16 of page 2, "However" (line 11) and "level" (line 12) are unnecessary. Also, the sentence beginning with "Accordingly" in this paragraph (page 2) is unnecessary.

Line 2 of page 3 should contain an article ("the" or "a") before "wiring pattern."

The main paragraph of page 4 contains a run-on sentence which should be divided into several smaller sentences. Also, the section of lines 16-19 which begins "Further" is redundant; this description appears almost verbatim on the previous page (page 3, lines 10-13).

Line 19 of page 5 reads "connected to each other through a connector 4" and could be changed to simply read "connected through a connector 4."

Commas should appear after "7C" and after "connector 4" on line 21 of page 5, and "both the

replaced by "Thus," in order to start a new sentence.

Art Unit: 2878

"Thus threaded," appearing twice in lines 8-9 of page 9, confuses this section of the description and should be reworded.

A comma should appear after "pickup element 11" on line 3 of page 10.

"The removable" (line 8, page 10) is unclear and could be changed to "Removal."

An extraneous comma appears on line 4 of page 11 ("filters,").

"As" on line 13 of page 11 is unnecessary; a comma is needed on line 16 and "using a soldering technique" (lines 16-17) could be changed to simply read "using soldering."

A comma should appear on line 1 of page 12 ("bonding -- , -- while").

The run-on sentence which begins on line 5 of page 12 should be separated into several, shorter sentences.

Line 19 of page 12 requires a comma after "less" and before "so."

A comma should appear after "10" on line 25 of page 12.

"Including" on page 15, line 13, could read "which includes."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

Art Unit: 2878

pattern" or the description appearing in lines 10-13 of claim 5 would be more easily understandable.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2 and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,342,406 to Glenn et al, in view of U.S. Patent No. 6,266,197 to Glenn et al.

Regarding claims 1 and 2: Figures 2 and 3 of Glenn '406 disclose an image pickup device which comprises a light-transmissible board **110** having a wiring pattern **114,118** formed on one surface, as well as an image pickup element **102** with photodetecting portion **104**. Element **102** is shown flip-chip mounted on the surface of the board **110** such that the photodetecting portion **104** is opposite to an area where there is no wiring pattern. The device of Glenn et al '406 does not specifically show the light-transmissible board **110** as containing a filter. However, it is well known in the art to provide filters in one or more layers of light-transmissible boards in image pickup device packages. Figure 2 of Glenn et al '197 shows a light transmissible board **122** which can contain an infrared rays cutting filter **1812** (Fig. 18A). Board **122** is disposed above the photodetecting portion **110** of image pickup element **106**. Therefore, made by modifying the device of Glenn '406 by providing one or more infrared-filtering layers in the light transmissible board **110** disposed above the image pickup element **102**, since it is well

known in image pickup device construction to filter certain aspects of incident light through this method, as shown by Glenn '197.

Regarding claims 4 and 5: The device shown by Glenn et al '406 does not expressly disclose a lens unit mounted on the other surface of the light transmissible board **110** so as to be located above the photodetecting portion **104** of image pickup element **102**. It is well known in the art, however, to provide a lens above active areas of image pickup elements in image sensor packages. Figure 2 of Glenn '197 shows alignment notches **130** for mounting a lens (not shown) above the photodetecting portion **110** of image pickup element **106**. It would have been obvious to one having ordinary skill in the art to dispose such a lens above the photodetecting portion of the image pickup element shown by Glenn '406, in order to better concentrate or focus incident radiation to the photodetecting portions. Also, the fact that the preamble of these claims states that the device is part of a camera system or camera module is considered the intended use of the device and is not given patentable weight. There is no structure provided in the body of claims to define the exact device in which the invention would be used.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over '406 and '197 to Glenn et al as applied to claims 1-2 above, and further in view of U.S. Patent No. 4,418,284 to Ogawa et al. The modified device of Glenn et al does not teach using resin to seal the peripheral edge portions of image pickup element **102**. It is well known, however, to hermetically seal with resin the active areas of image pickup devices from ambient-environmental factors such as dust

photodetecting portion and resin **13** hermetically sealing the peripheral edge portions thereof. It

Art Unit: 2878

would have been obvious to one having ordinary skill in the art at the time the invention was made, therefore, to seal the peripheral edges of the image pickup element in the modified device of Glenn through the use of resin to seal the device from environmental factors, since such a technique is well known in the art, as taught by Ogawa.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent No. 5,867,368 to Glenn discloses a method for mounting an image pickup device. The Figure 1 embodiment comprises a light transmissible board **24** and an image pickup element **10** with photodetecting portion **14**. The image element chip is shown flip-chip mounted via solder bumps **15** and sealed through the use of resin **21** and other adhesive **22**. Figure 2 shows another view of the image pickup element, before mounting.

U.S. Patent No. 4,523,102 to Kazufumi et al shows in Figure 4A and 4B an image pickup device arrangement which comprises a color filter **1** disposed above the active portions of an image pickup element **6**. Resin-adhesive **14** seals peripheral edges of the element's photoconductive portions.

U.S. Patent No. 5,138,145 to Nakamura et al discloses in Figure 1a an image pickup element **13** mounted on an image pickup chip **12**, which comprises a conductive pattern **14,15,17** and peripheral edges insulated through the use of resin **11**.

Art Unit: 2878

bumps **204**. Element **304**, which can comprise a light-transmissible board or a lens, is shown disposed above the photodetecting array.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher W. Glass whose telephone number is 703-305-1980.

The examiner can normally be reached 8:30am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seungsook Ham can be reached at 703-308-4090. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

cg
March 20, 2002

STEPHON ALLEN
PRIMARY EXAMINER